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23 March 1982

Worldwide Report

ENVIRONMENTAL QUALITY

No. 344

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CONTENTS

ASIA

AUSTRALIA

Radioactive Mining Waste Found To Pollute Resort Area
(Colin McKay; THE WEEKEND AUSTRALIAN, 9-10 Jan 82) 1

INDIA

Destruction of Country's Forests Deplored
(Raj Chengappa; INDIA TODAY, 1-15 Mar 82) 3

MALAYSIA

Environmental Official Responds to Criticism
(BUSINESS TIMES, 11 Feb 82) 9

NEW ZEALAND

Aerial Photography To Help Combat Coastal Erosion
(THE NEW ZEALAND HERALD, 11 Feb 82) 10

Minister Vows To Oppose Development of Scenic River
(THE NEW ZEALAND HERALD, 13 Feb 82) 11

PEOPLE'S REPUBLIC OF CHINA

Measures Taken for Tree Planting
(XINHUA Domestic Service, 28 Feb 82) 12

EAST EUROPE

GERMAN DEMOCRATIC REPUBLIC

Danger of Agrochemicals to Ground Water Purity Discussed
(Horst Beitz; BAUERN-ECHO, 21 Jan 82) 14

LATIN AMERICA

BARBADOS

Editorial Hails Government, IADB Action on Beach Erosion
(ADVOCATE-NEWS, 17 Feb 82) 18

BERMUDA

Satellite Dish Approved Despite Environmental Objections
(THE ROYAL GAZETTE, 25 Jan 82) 20

SUB-SAHARAN AFRICA

BOTSWANA

Nation Urged To Pray for Rain
(DAILY NEWS, 16, 19 Feb 82) 21

Drought-Scare
Sizable Turnout

Briefs
Drought Concern 23

NAMIBIA

Damaraland's Elephant and Rhino Severely Threatened
(THE WINDHOEK ADVERTISER, 5 Mar 82) 24

SOUTH AFRICA

Rains Arrive Too Late To Save Crops
(Keith Abendroth; THE CITIZEN, 11 Mar 82) 25

Cumulative Effects of Toxins on Oceans Criticized
(D. A. Lord; SOUTH AFRICAN DIGEST, 12 Feb 82) 26

Briefs
Drought in Bophuthatswana 32

ZIMBABWE

Drought-Stricken Matabeleland Faces Huge Cattle Losses
(THE HERALD, 3 Mar 82) 33

WEST EUROPE

FRANCE

Protest Grows Against Forest Reform Plan
(Jacques Lesinge; LE FIGARO, 1 Feb 82) 34

GREECE

Briefs
Catastrophic Floods 37

RADIOACTIVE MINING WASTE FOUND TO POLLUTE RESORT AREA

Canberra THE WEEKEND AUSTRALIAN in English 9-10 Jan 82 pp 1, 2

[Article by Colin McKay]

[Text] DANGEROUS levels of radioactivity have been found on land zoned for residential development in a booming coastal resort town near the NSW-Queensland border.

A special investigation by *The Australian* has discovered that a hectare of reclaimed swamp, worth almost $1 million, in the NSW north-coast town of Byron Bay, contains heavy deposits of thorium 232, with radioactivity readings of up to 10 times above safety levels.

High readings were also found in a children's sports ground, an area used by Girl Guides and the local railway station.

The thorium is contained in deposits of a mineral known as monazite, which has been dumped around the main town site for more than 40 years by sand-mining companies which formerly operated at Byron Bay.

Monazite is a waste product separated from zircon and rutile and can contain heavy bodies of thorium 232, a radioactive element.

The shire president this week admitted that the Byron Bay Shire Council knew a year ago of similar radioactive contamination at another housing development site near the main township.

The heavy radioactive readings found by *The Australian* are in an area bounded by Massinger Street, Paterson Street and Paterson Lane, about 250 metres from Byron Bay's main beach.

The readings were obtained by Dr Murray Winn, Associate Professor of Physics at the University of Sydney, and one of Australia's leading experts on cosmic rays.

Dr Winn travelled to Byron Bay to measure radioactivity in the town after testing soil samples taken from suspect areas and given to him by *The Australian*.

In some areas, including the Byron Bay Primary School sports ground, readings were also dangerously high.

Using two Geiger counters, Dr Winn obtained radioactive readings up to 10 times above safety levels in the centre of the sports ground and readings up to 44 times above safety levels on small areas near the Byron Bay railway station.

Readings about eight times above safety levels were also produced in small areas near a hall built for Girl Guides, next to the town's main sports ground.

The heavy radioactive readings near the railway line were apparently caused by excessive spillage over the years when sand mining products were shipped from the town by rail.

But Dr Winn says radioactive contamination at the school sports ground, the railway area and the Girl Guide's hall do not present an immediate major threat to public health because the areas are only in casual use.

REMOVAL

But he does recommend the immediate removal of the contaminated waste from the three areas, or alternatively, that they be covered with up to a metre of uncontaminated filling to shield the radioactivity.

Dr Winn has warned that the high radioactivity in the reclaimed swamp area presents a definite danger because it has been designated for residential use.

It would be impossible either to remove the contaminated soil or safely cover it.

This is because any filling used would be penetrated by excavations for building foundations. Even residents digging in their gardens could be exposed to dangerous radioactivity.

The findings indicate that similar dangerous radioactivity may exist on land all along the NSW coast where sand-mining companies have dumped waste materials.

Told of *The Australian's* investigation this week, the NSW Minister for Health, Mr Brereton, said he would request a report on the matter from the NSW Health Commission.

"I can assure you, I will take all steps necessary to ensure the health and welfare of people in the area," he said.

"I have also asked the Health Commission to advise me on the legal responsibilities of sand-mining companies for any residual risks resulting from their past activities."

Areas of Byron Bay were first mined for zircon and rutile by a company called Zircon-Rutile Ltd, which began operations in 1934. The company was later taken over by Associated Minerals of Australia, which ceased sand mining in the area in 1975.

Dr Winn's report has been handed to the NSW Health Commission, which will begin an immediate investigation of radioactivity in the area.

The NSW Director of Public Health, Dr Allan Crawford, said an officer from the commission's radiation branch would be sent to Byron Bay as soon as possible to take readings and report back to the commission.

Dr Crawford said the commission had been aware of deposits of thorium in the area, caused by past sandmining activities.

"If our readings compare with those of Dr Winn, the proposed sub-division near Byron Bay's main beach will immediately be declared unfit for building," he said.

"The only alternative then left to the council would be to take over the land and convert it into a public park, after dumping enough filling over the area to shield out any radioactivity."

Dr Crawford said if the Health Commission's reading proved comparable with those taken by Dr Winn, the commission would also recommend immediately that radioactive waste dumped at other Byron Bay town sites be removed.

Alderman Stan Robinson, the Byron Bay shire president, this week told *The Australian*he would immediately take up the matter with the shire engineer and town planner.

He said he would present a report to the Shire Council at its next meeting on January 26.

He said the council had become aware early last year of similar radioactive contamination on the site of a multimillion dollar housing development near the main township.

"This contamination was also caused by the dumping of monazite waste, but we were able to remove it because the development was on fairly high ground," he said.

"The waste was subsequently buried about 30 metres deep. But this procedure obviously can't be carried out in the reclaimed swamp area."

Mr Robinson said he would seek legal advice on whether his council was required to buy back the land from its present owners, or whether the purchase should be made by the State Government.

He said the price of property around Byron Bay had almost quadrupled over the past three years, due to an unprecedented land boom on the NSW north coast.

"If the Health Commission advises us that this particular sub-division is too dangerous to build on, then obviously the present owners face a big drop in value for their property," he said.

"In future, it might have to be a council provision that any possible contamination be removed from blocks in the Byron Bay area before permission is granted for development."

CSO: 5000/7520

DESTRUCTION OF COUNTRY'S FORESTS DEPLORED

New Delhi INDIA TODAY in English 1-15 Mar 82 pp 99-104

[Article by Raj Chengappa]

[Text]

APOCALYPTIC as the preceding scenario may appear, the threat is frighteningly real. Deforestation's relentless march is steadily stripping the country bare of its forest cover, leaving behind barren man made deserts. From the majestic coniferous forests of the Himalayas to the deciduous belt of the Vindhyas and the tropical evergreen canopy over the Western Ghats, the story is tragically the same; indiscriminate destruction of forests that could eventually turn India into a vast and inhospitable wasteland.

In his dingy office in the bowels of Krishi Bhavan in New Delhi, Narain Bachkheti, the bespectacled inspector-general of forests, peers gloomily at a pile of charts showing the damage done by deforestation so far. "Experts recognise three different stages in the march of man; civilisation dominated by forests, civilisation overcoming forests and civilisation dominating forests," he says, "our country is now passing through an acute phase of the third stage which is civilisation dominating forests to the point of destroying them and destroying itself in the process. This is not an empty threat."

The danger, in fact, is far more. The Union Government's Forest Department estimates that within the last three decades, 4.5 million hectares of forests or an area the size of Tamil Nadu, have vanished, leaving behind barren land. The national forest policy of 1952 envisaged the country's forest cover being raised from 23 per cent to 33 per cent of the total land area. Three decades later, it has been reduced to an ecologically mind-boggling 10 per cent. Every year, lush green forests the size of New Delhi, Bombay and Calcutta combined are being devastated with criminal abandon, leaving behind the seeds of a future disaster that is Orwellian in its magnitude.

Currently, only five out of India's 22 states (Himachal, Orissa, Tripura, Madhya Pradesh and Assam) come anywhere near the desirable one-third land area under forest cover. Further, most states exist in the bliss of ignorance. Orissa, for instance, stoutly insists that 43.6 per cent of its land area is forested while satellite pictures taken six years ago clearly show that the actual figure is an ecologically insufficient 30.1 per cent. Other states are no less culpable:

- Himachal Pradesh's forest area is a mere 19 per cent compared to the official claim of 39.1 per cent with the giant deodars in the famed Kulu valley having become virtually extinct. An estimated Rs 50 crore worth of trees each year are the victims of illegal felling by contractors who smuggle the precious timber to the ravenous wood industries of the plains.
- In Uttar Pradesh, satellite pictures show the towering Himalayas stripped bare of their thick coniferous cover to a height of almost 2,800 metres—the limit of year-round human habitation.
- Madhya Pradesh, which boasts of the largest forest belt in the country (16.6 million hectares) has lost more than two million hectares of teak, sal and bamboo forests; the largest amount of forest cover lost by any single state.
- In Assam, another forest-rich state, only 23.03 per cent of reserve forests have survived the combined onslaught of 380 forest-based industries including 40 plywood

factories and 10 paper mills. Official statistics, however, still blissfully maintain that 39.2 per cent of the area is under forest cover.

► In Karnataka, the mangrove forests along the west coast have all but disappeared, the scrub forests of the Deccan plateau denuded and the evergreen forests reduced to a paltry 5 per cent from the original 20 per cent.

► Maharashtra projects a sorrier picture with vast areas, particularly in Ratnagari district, having been laid bare of forest cover.

► West Bengal has lost 3.2 lakh hectares of its forest in the past 30 years.

The brutal rape of India's forests has raised the curtain on a man-made ecological catastrophe of unprecedented magnitude which, in its ultimate effect, could threaten life more climatically than the combined fury of all natural disasters. The destruction of forests is relentlessly transforming all mountains and hills into uncontrollable barren landslide zones. It threatens to convert the country's fertile river basins into unproductive swamps. It is pulling the deadening desert zones over green agricultural lands. It is incessantly adding to the unending flood of rural migrants to overcrowded towns and urban conglomerates. It is making maneaters out of tigers and rogues out of elephants. It is fast threatening to take India to an unenviable era where not only food will be scarce but there will not be fuel to cook it. A sombre Prime Minister Mrs Indira Gandhi told foresters in Dehra Dun last month: "If we care for our future we must save our forests."

Balance Destroyed: In more specific terms, the galloping destruction of the country's forests has succeeded in overturning the delicate ecological balance between soil and vegetation, ushering in attendant dangers (*see box*). The thick canopy of overgrowth in tropical forests act as rainbreakers, reducing the damage to the topsoil. With deforestation, the rich topsoil is washed away by torrential rain, leaving barren land and a high rate of siltation in river beds. For instance, owing to the denudation in the north-eastern hills of Arunachal Pradesh, the bed of the Brahmaputra river has risen by as much as 14 feet, increasing the danger of floods.

B.B. Vohra, chairman of the National Committee for Environment Planning (NCEP) a body that advises the Government on environmental policies, estimates that every year, 6,000 million tonnes of topsoil equivalent in nutrients to twice the annual production of fertiliser, is washed away, resulting in a loss of around Rs 1,000 crore. It has reduced 7 per cent of the country's cultivable land to barrenness or an area capable of producing half the country's annual foodgrain requirement. Two years ago, Vohra assessed that it would cost at least Rs 50,000 crore—half the entire public sector outlay in the Sixth Plan—to put the country's land and forests back in order.

The grim statistics march through countless reports and surveys like the swathes of bare land left behind by deforestation. The Birla-funded Economic and Scientific Research Foundation estimates that out of a total of 306 million hectares of cultivable land, 145 million hectares or 45 per cent of the land area is seriously threatened with erosion and is desperately in need of soil and water conservation measures, as is at least a quarter of the entire forest area in the country. Soil erosion and high siltation in river beds have jeopardised no less than 39 major river valley projects which generate more than half the country's power requirements and irrigate one-quarter of its total food crops. Says well-known zoologist Satish Chandran of Trivandrum: "The entire ecological system is disintegrating. Some of the areas look like Hiroshima after the blast."

The National Commission on Floods estimates that the area vulnerable to floods has doubled from 20 million hectares to 40 million hectares. Last year, a total of 10 states experienced devastating floods in which 1,181 people and 58,000 head of cattle perished. The total annual loss due to floods averages out at an estimated Rs 800 crore.

Floods: Siltation in river beds has reached disastrous proportions. The Brahmaputra bed has risen by 14 feet. The Jhelum in Kashmir has overflowed its banks in 13 years out of 20 and the probability of floods in Kashmir valley was found to be as high as 70 per cent. In Bhakra and Ramganga reservoirs the rate of siltation was estimated to be one and a half times the assumed rate. "At the explosive rate of sedimentation there will hardly be any Himalayan reservoir left and the whole irrigation and power system in the Indo-Gangetic plain will be jeopardised," warns Professor S.L. Shah, emeritus scientist of the Vivekananda Laboratory of Hill Agriculture, Almora.

"We are heading for an ecological disaster," warns Nalni Jayal, joint secretary, Department of Environment (DOE). The DOE is a classic example of the Government agencies involved with the problems of deforestation. When the DOE was formed two years ago, it was hailed optimistically as the Government's trouble-shooting agency entrusted with the task of ending mindless deforestation. But so far it has done precious little, as officials like Jayal admit, and is still in the process of "organising itself". The department incredibly, has so far been given no terms of reference and is currently showing signs of being slowly strangled by the bureaucratic noose. A state forest official, when asked about the DOE's contribution to deforestation, quipped derisively: "Haven't you heard? They're busy studying deforestation in Antarctica."

The DOE is not the only agency at which accusing fingers are being pointed. The NCEP has been largely dispensing advice that nobody listens to. Says one ecologist: "The NCEP has no eyes to see and no arms to work. It concentrates on dishing out advice that nobody wants to eat." Similarly, the Forest Research Institute in Dehra Dun, the country's premier institution, proudly claims that its most significant achievement has been forestry product research, an area that directly benefits industry, the indirect cause of deforestation. In fact, K.M. Tewari, its grey-haired president, admits candidly that the institute has not made a single study on the total impact of deforestation. Most ecologists and conservationists unanimously agree that the Central Government agencies are predominantly populated by people living in ecological ivory towers, who readily admit to the plethora of problems but seem to provide little or no answers.

Bungling: The next rung of the ecological ladder, the state forest departments, have done more bungling than jungling. According to ecologists, the forest departments have laid the basic foundations of deforestation by hiring contractors indiscriminatingly to exploit forest resources. Once the foothold was secured, the contractors indulged in an orgy of forest destruction, with the forest department actively conniving in the illegal felling, which has now grown to alarming proportions. Even a large percentage of reserve forests which are labelled as "virgin forests" by the department, have been raped systematically by unscrupulous contractors with a share of the "profits" going to bribery-prone forest officials. In Uttar Pradesh at least a quarter of its rich forest area has been lost by illegal felling and state Forest Minister Nirbhay Naraian Singh admits that even today illegal felling is rampant in the Nainital district. In the Himalayan belt, contractors hired to tap resin have been over-exploiting the trees, while forest guards look the other way, leading to the death of thousands of mature trees.

The merchants' role played by the forest departments has come under severe criticism from ecologists. Said one of them: "The forest department concentrates on the price tags of species. They behave like middlemen. Middlemen are susceptible to pressures and cuts. Basically all foresters are becoming agriculturists and they may as well hand it over to sardars who would do a better job of it."

The contractor system has other invisible evils as well. Contractors rarely hire local tribals who inhabit the forests but instead bring in work gangs from outside. This not only isolates the tribals but allows the work gangs to intrude into the forests. Currently, tribals in Madhya Pradesh are being hired by contractors to collect sal seeds. They are paid Rs 50 a quintal while the contractors sell it for Rs 250 a quintal. They pay the Government a royalty of Rs 30 a quintal and pocket the rest.

Says Madhav Gadgil, eminent ecologist from the Indian Institute of Science in Bangalore: "The entire problem is that there are three segments of people dealing with forests: the local population, government and the industries, all three of whom have no personal stake in it at all. The local population is not bothered about preserving forests because they earn more if they steal the wood instead of working for low wages. The industry is interested only in immediate profits. The bureaucracy has neither responsibility nor accountability. An officer never spends more than two years in a particular area. As a result nobody sheds any tears when forests are destroyed."

IN 1971, after the national commission on agriculture urged forest departments to be more "productive", a total of 18 states established forest development corporations to develop monoculture plantations for commercial use. Typically, instead of locating the plantations in areas of spare cover, the corporations have been busy clearing dense forests to make way for the plantations and showing the timber sold as profits. In the Markhanda area of Chandrapur district of Maharashtra, existing forests have been registered as "miscellaneous" and deliberately destroyed to make way for eucalyptus trees. Out of 1.4 lakh trees planted, only 40 survive today. Only recently has the Central Government issued instructions to state governments to stop clear-felling of forests and locate the plantations on already deforested land.

Much of the problem, however, stems from the fact that forests were a state subject till 1976 when it was transferred to the concurrent list under the 42nd Amendment. As a result, while the Central Government laid down the national forest policy, which was more pontifical than specific, the states have largely paid contemptuous heed to the Centre's directives and proceeded to decimate forests almost at will. In the Kali hydel project area in Karnataka, for instance, entire forests have been submerged and the people displaced by the project were given alternative plots in Ramnagaram, where another forest belt was destroyed to rehabilitate the people.

This kind of bureaucratic bungling and dabbling causing irreversible loss continues to plague the country. Till recently the cost-benefit analysis done to study the viability of a river valley project never took cognisance of the ecological damage. In the Himalayas pylons were rammed into the ground with no thought of the landslides they would cause. As a result, in the hill districts of Uttar Pradesh vast stretches of fertile land have been covered by rubble dislodged by the pylons to the valleys below.

The forest department takes refuge behind the most obvious reason for deforestation: population increase. Bachkheti points out that while India has 2 per cent of the earth's land area and 1 per cent of its productive forests the country has 15 per cent of the world's human population and 10 per cent of its cattle population. With an annual population rise of 23 million people forests the size of Rajasthan have been encroached upon for cultivation. Excessive browsing and grazing have thinned forests too. The country's live stock population of 400 million estimatedly graze on 11 per cent of the total forest area.

Scarcities: Meanwhile, fuel wood and industrial wood are in short supply because of the failure of the forest department to preserve existing forests or re-stock them. India's forests are currently only able to provide 20 million cubic metres out of the 165 million cubic metres of firewood required by the country's rural population. An FAO (Food and Agricultural Organisation) expert has estimated that by the turn of the century, India will be able to grow enough food but will not have enough firewood to cook it.

Industrial wood faces the same shortage problem. Of the total demand of 26 million tonnes, forests could only provide 11 million tonnes. By the end of the century, the demand is likely to be around 65 million tonnes. "We may not even have enough wood to manufacture paper or furniture in the next 20 years," warns a forest official.

To combat the fuel and fodder crisis, the Government is now flourishing its social forestry scheme as the panacea for the ailment that afflicts Indian forests. The scheme envisages the growing of trees in

A Double-Edged Sword

IN the wake of the reckless deforestation two unique but violently opposite popular movements have bubbled. While in the Chamouli and Tehri districts of Uttar Pradesh the now famous Chipko volunteers are out to save trees and grow them, in the Singhbhum district of Bihar tribals have organised themselves into a "Jungle Katao" movement and have been felling trees in protest.

The Chipko movement was formed in dramatic circumstances in Gopeshwar, the picturesque headquarters of Chamouli, 450 km from New Delhi. In 1979 when the Uttar Pradesh Government auctioned ash trees to an Allahabad sports manufacturer they alloted the same forest area where just a month ago a request by the local people to cut the wood was turned down by it.

Angered by the Government's action the villagers decided on a unique protest: when the contractor came to fell the trees the villagers gathered around and hugged the trees. Thus Chipko, which means hug in Hindi, was born. The movement was co-ordinated by a Sarvodaya organisation called the Dasholi Gram Swarajya Sangh headed by the rugged Chandi Prasad Bhatt.

While initially it began for economic reasons the movements took an ecological turn after the bearded Sundarlal Bahuguna, a Gandhian living in neighbouring Tehri, took active interest in it. With a band of enthusiasts he set out on his famous Kashmir to Kohima trek and his reports exposed the reckless deforestation that was taking place in the Himalayas.

Increased Awareness: Wherever Bahuguna tramped he educated people about the need to preserve trees and the dangers that would befall them if they did not. The sustained agitation by Chipko volunteers forced the Uttar Pradesh to ban felling of trees in hill areas. Said Bahuguna: "Our movement is not just for saving the hills: it is for the survival of mankind."

In Chamouli, curiously it is the women who are the main force of the Chipko movement. The burden of gathering firewood falls on them and every year the search takes longer. Said 65-year-old Paravati Devi, her face lined with toil and age: "It takes me at least the whole day to collect firewood. We must preserve our trees." Not only this, the village now seems to have an increased awareness that trees prevent landslides and floods. Last year the villagers started their afforestation programme and have so far planted 3 lakh seedlings on village commons. They also hold eco-development camps to educate the people from the surrounding villages about the need of forest preservation.

Destructive Anger: But in Bihar the reverse is taking place. The Jungle Katao movement began in Singhbhum in 1977 when the Bihar Forest Development Corporation decided to replace the natural sal forests with the highly priced teak. The tribals depended on sal not only for food but also for agricultural implements, as well as employment. After repeated requests to the Government had failed, the tribals, under the banner of Jharkhand, an age-old Marxist-led movement for the establishment of a separate tribal state, began agitation.

They raided tree nurseries, destroyed saplings and forest buildings. About 25 people have been killed in regular clashes with the police so far but nothing has been resolved. Meanwhile the Jharkhand leaders continue to use the sal-teakwood issue to stir the fury of the tribals. Said A.K. Roy, a Marxist MP from Bihar: "Now sal means Jharkhand, saguwan (teak) means Bihar."

village woodlots, wasteland and degraded forests. One hundred districts have so far been selected to raise firewood plantations over an area of 2.6 lakh hectares. An estimated 580 million seedlings will be distributed to villagers. Meanwhile, 12 states have already launched their own social forestry schemes with the financial aid of the World Bank and the Swedish Government. Judging by current performances, the scheme will prove a dismal failure unless it is overseen adequately and strict controls imposed.

According to a study done by the Indian Institute of Management, Bangalore, Kolar district in Karnataka offers an excellent example of misguided enthusiasm in the social forestry concept. In this district, farmers have replaced food crops with eucalyptus plantations to sell to textile mills in the state. The result is that food production has dropped dramatically. Neither is eucalyptus suitable for firewood or fodder. Most ecologists dismiss social forestry as a "numbers game" in which meaningless statistics are bandied about with no relevance to the problem.

Sundarlal Bahuguna, leader of the Chipko Andolan, a movement to save trees, reads a dire conspiracy in the social forest programme of the Government whom he accuses of encouraging common-culture species to meet the rayon and wood needs of developed countries. Queries the bearded Bahuguna: "Are we going to use our land for the short-term exploitation of a few affluent countries or are we going to make our country self-sufficient in food and clothing?"

Neither is the Centre unaware of the problem. The Government has under proposal the All India Forest Act but even this has been the target of criticism by ecologists. Their main fear is that it serves to give immense power to the states by widening the definition of forests to include any land so notified by the forest department. It also proposes to increase the imprisonment term for offenders from six months to three years and fines from Rs 500 to Rs 5,000, and empower forest officers or police to arrest without magisterial order, any person against whom there is reasonable suspicion of violating the act. But this, ecologists feel, will only succeed in increasing corruption in the department. Says Nair: "The bill will provide an army of guards to protect forests. But you cannot preserve forests with bayonets. People have to preserve forests."

Tribals' Protest: Ironically, that is precisely what is happening. Angered by governmental indifference and the ruthless exploitation of forests, anti-deforestation movements, mainly among tribals, has been making a significant impact on the forestry scene. In Chamouli and Tehri districts, the famous Chipko movement which employs the technique of clinging to trees to save them from indiscriminate axes, has been rapidly gaining in strength and support. Apart from having saved thousands of trees, they have forced the Uttar Pradesh Government to ban the felling of trees above 3,800 feet (*see box*).

In the Chotanagpur area of Bihar, tribals have been waging a three-year-old battle to prevent commercial teak from replacing sal forests. Bastar tribals have had equal success with preventing a pine plantation which would have replaced their sal forests, Ecological movements like Seva the Silent Valley movement in Kerala, the Bedthi agitation in Karnataka and the Bhoomi Seva movement in Maharashtra have made their own contribution.

The Silent Valley, a five million-year-old virgin tropical forest, would have been destroyed if the Kerala Government had gone ahead and built the Rs 72 crore hydroelectric project. But faced with a sustained agitation by ecologists which earned worldwide support, the Government was forced to appoint an expert committee to review the viability of the project. The fate of Silent Valley still hangs in the balance, like the rest of India's forests.

Meanwhile, the increasing alienation of the tribals in these areas is sowing its own seeds of discontent and many experts grimly predict open revolt in some areas. Says well-known journalist B.G. Verghese: "We must let tribals become partners in forest production and not merely dismiss them with compensations. They are in an explosive mood and movements like Jharkhand are not secessionist movements but an expression of anger and frustration. Our policy should be tribals and development and not tribals or development."

The consensus emerging among ecologists and more sensitive elements in the Government is that instead of handing over the responsibility of afforestation and conservation entirely to the forest department the local population, including the tribals should be largely involved in future forestry schemes. Instead of handing over tapping of forest resources to contractors or even to forest development corporations the people around these forests should be employed to do it so that they would more readily preserve their forests when their livelihood depends on it. For afforestation programmes the vast stretches of degraded forest and revenue land lying fallow should be handed over to local population for growing trees with the help of government finance and reaping a share of its yeild. Not only will they guard these trees from indiscriminate felling but ensure that these survive the vagaries of weather. Said an ecologist optimistically: "By these measures we may not be able to get back our original forests but at least we will be able to halt further devastation of our forests."

Some semblance of a start has been made in Orissa and Gujarat where tribals are being trained in advanced methods of tree culture and being paid wages during training. After the training, they are given land to plant trees and the eventual produce belongs to them. But these states are only two faint glimmers of light in an area of almost total darkness. The main fear, says an ecologist, is that the country could easily turn into one vast desert before the real impact of deforestation dawns on the people and the policy makers.

—RAJ CHENGAPPA with bureau reports

CSO: 5000/5691

MALAYSIA

ENVIRONMENTAL OFFICIAL RESPONDS TO CRITICISM

Kuala Lumpur BUSINESS TIMES in English 11 Feb 82 p 2

[Text]

HITTING back at his critics for their lack of balance and fairness, the director general of Environment in the Science, Technology and Environment Ministry, Mr S.T. Sundram, yesterday reiterated that his department had done its utmost to curb pollution in spite of the constant lack of funds and skilled personnel.

"We have not spared ourselves," he said in a luncheon talk at yesterday's meeting of the Kuala Lumpur Rotary Club.

Referring to a *New Straits Times* article on last month's environmental seminar in Petaling Jaya, Mr Sundram said the thesis attributed to environmental officials to the effect that pollution is unavoidable and must be put up with in the name of progress and development "represents a misleading and a mischievous distortion."

In fact, he said, the Environment Division had exerted its best efforts "in terms of (pollution law) enforcement accompanied by the accelerated development of technology and the intensification of environmental education."

On the question of delays in the publication of his division's annual reports, Mr Sundram said the 1979 report was in fact ready to go to Press while the publication of the 1980 and 1981 reports would be speeded up.

Mr Sundram went on to detail the environmental problems in the Klang Valley in terms of the discharge of effluents and obnoxious gases, piggery waste, motor vehicle emissions, the discharge of huge quantities of particulates, siltation, solid waste discharges, noise and traffic congestion.

His main contention was that, in the Klang Valley as elsewhere, a sensible balance should be struck "so that development proceeds apace without destruction (of the environment)."

According to him, this process is far from being an easy or simple one, especially in a dynamic setting with frequent changes in the key variables.

In the last analysis, he argued, effective environmental management boiled down largely to a matter of attitudes and values, taking a unified view of industry, environment and society.

The true value of the environment, he pointed out, does not arise from its exploitation for short-term gain accruing to sectional vested interests but in its sound management for sustained productivity for generations and generations.

The criticism of Mr Sundram and environmental officials generally was reflected in a report on a seminar organised by the Environmental Protection Society of Malaysia.

CSO: 5000/8007

AERIAL PHOTOGRAPHY TO HELP COMBAT COASTAL EROSION

Auckland THE NEW ZEALAND HERALD in English 11 Feb 82 p 16

[Text]

The sea floor off Whirinaki in Hawke Bay will be photographed from the air early next month in an experiment designed to help to combat coastal erosion.

The experiment will be the first of its type in New Zealand.

In charge of the project is Mr Keith Smith, who heads the water and soil division of the Ministry of Works and Development in Auckland.

Rapid Change

The Whirinaki coast was chosen for the experiment because of the rapid change in contour of the seabed.

The project will involve three flights over the area, in which photographs will be taken using special filters.

One flight will be low and close to the land, the second one low and further out to sea, and the third high in the air so the two lower photographs can be matched showing the seabed up to two kilometres offshore.

Mr Smith said the ministry hoped to put out aerial photographs of the whole beach area, using special lenses which penetrate to depths of 10 metres.

"We want to see how accurate we can get it. If we can get accuracy to within 0.2 metres or less, then it will be ideal," he said.

After Storm

If the experiment is successful then the method can be used in areas of high coastal erosion to track sand movements.

"By re-flying over an area and photographing the seabed after a storm we will be able to find out how much sand has moved offshore," said Mr Smith.

"We can then look at a beach and say it will take so long to recover after the initial stages."

By tracking the sand movements, dredge tailings could be put in a position offshore where they could be washed on to the beach to replace sand swept away.

"This would save us a terrific amount of time in terms of boats and echo sounders to trace drifts," Mr Smith said.

He said the normal procedure for tracking sand movements was by exposing a barge of sand to radiation and tracing the drift.

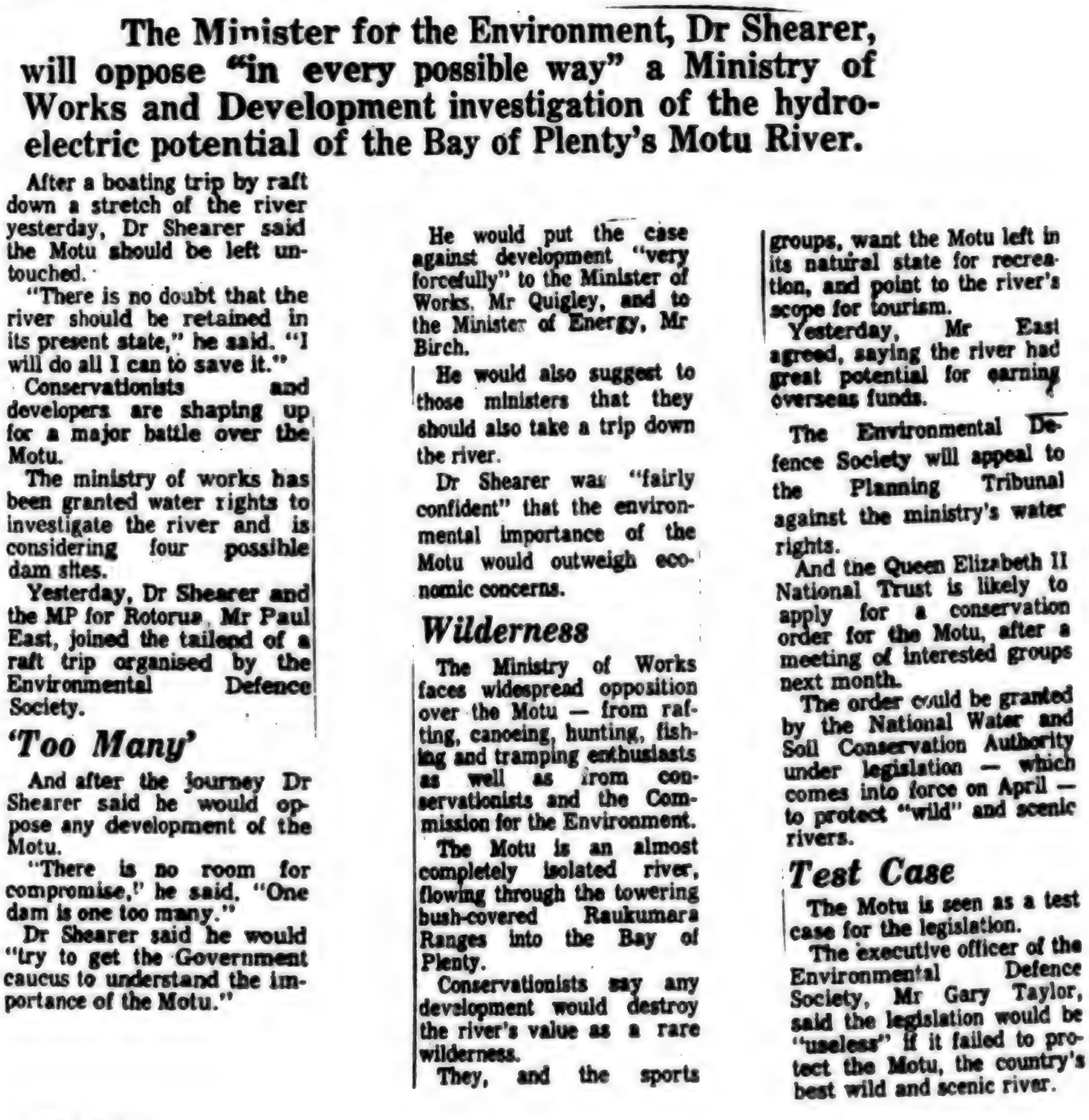
The overhead photography is a relatively new process.

CSO: 5000/9064

MINISTER VOWS TO OPPOSE DEVELOPMENT OF SCENIC RIVER

Auckland THE NEW ZEALAND HERALD in English 13 Feb 82 p 1

[Text]



The Minister for the Environment, Dr Shearer, will oppose "in every possible way" a Ministry of Works and Development investigation of the hydro-electric potential of the Bay of Plenty's Motu River.

After a boating trip by raft down a stretch of the river yesterday, Dr Shearer said the Motu should be left untouched.

"There is no doubt that the river should be retained in its present state," he said. "I will do all I can to save it."

Conservationists and developers are shaping up for a major battle over the Motu.

The ministry of works has been granted water rights to investigate the river and is considering four possible dam sites.

Yesterday, Dr Shearer and the MP for Rotorua, Mr Paul East, joined the tailend of a raft trip organised by the Environmental Defence Society.

'Too Many'

And after the journey Dr Shearer said he would oppose any development of the Motu.

"There is no room for compromise," he said. "One dam is one too many."

Dr Shearer said he would "try to get the Government caucus to understand the importance of the Motu."

He would put the case against development "very forcefully" to the Minister of Works, Mr Quigley, and to the Minister of Energy, Mr Birch.

He would also suggest to those ministers that they should also take a trip down the river.

Dr Shearer was "fairly confident" that the environmental importance of the Motu would outweigh economic concerns.

Wilderness

The Ministry of Works faces widespread opposition over the Motu — from rafting, canoeing, hunting, fishing and tramping enthusiasts as well as from conservationists and the Commission for the Environment.

The Motu is an almost completely isolated river, flowing through the towering bush-covered Raukumara Ranges into the Bay of Plenty.

Conservationists say any development would destroy the river's value as a rare wilderness.

They, and the sports groups, want the Motu left in its natural state for recreation, and point to the river's scope for tourism.

Yesterday, Mr East agreed, saying the river had great potential for earning overseas funds.

The Environmental Defence Society will appeal to the Planning Tribunal against the ministry's water rights.

And the Queen Elizabeth II National Trust is likely to apply for a conservation order for the Motu, after a meeting of interested groups next month.

The order could be granted by the National Water and Soil Conservation Authority under legislation — which comes into force on April — to protect "wild" and scenic rivers.

Test Case

The Motu is seen as a test case for the legislation.

The executive officer of the Environmental Defence Society, Mr Gary Taylor, said the legislation would be "useless" if it failed to protect the Motu, the country's best wild and scenic river.

CSO: 5000/9064

MEASURES TAKEN FOR TREE PLANTING

OW020925 Beijing XINHUA Domestic Service in Chinese 0724 GMT 28 Feb 82

[Excerpts] Beijing, 28 Feb (XINHUA) -- Implementation measures of the State Council on launching the nationwide voluntary tree-planting campaign.

The following implementation measures are formulated for effectively carrying out the "resolution on a nationwide voluntary tree-planting campaign" adopted by the Fourth Session of the Fifth NPC.

1. People's governments at and above the county level should all set up an afforestation committee to provide unified leadership for each area's voluntary tree-planting campaign and afforestation work as a whole.

A few places, where a tree-planting campaign is really difficult to develop due to restrictions because of climatic and land conditions, may be exempt from the nationwide voluntary tree-planting campaign and need not set up an afforestation committee, provided it is approved by the afforestation committee of the province, autonomous region, or municipality directly under the central government.

2. Afforestation committees at all levels should organize and push the various departments and units in each area to give various forms of wide and in-depth publicity to the "resolution on a nationwide voluntary tree-planting campaign" and these implementation measures, publicize the great significance of nationwide afforestation aimed at covering the motherland with trees, conscientiously do a good job of ideological mobilization, increase understanding, build up momentum and make it known to every household and every person.

3. All citizens of the People's Republic of China, males age 11-60 and females 11-55, with the exception of the disabled, should all undertake voluntary tree-planting tasks.

4. This voluntary labor is limited to the planting of state and collectively owned forests within the jurisdiction of each county or city.

5. The forestry rights to trees planted by voluntary labor on state-owned lands belong to the units currently managing these lands; where there are no definite managing units, the forestry rights belong to departments or units designated by the local governments. The forestry rights to trees planted by voluntary labor on collectively owned lands belong to the collective units.

6. To guarantee nursery stocks required for voluntary tree-planting, all localities should strive to do a good job in running the existing state-operated and collectively owned nurseries and arrange needed lands and specialized personnel for the expansion of nurseries and the building of new ones to grow superior stocks and healthy saplings.

7. Vigorous efforts must be made to strengthen cultivation, management and protection of trees planted by voluntary labor as well as existing wooded areas, ensuring that they will survive and grow into forests without being destroyed.

8. In tree planting and afforestation, it is necessary to pay attention to science and put the stress on practical results.

9. Every unit must, each year, conduct an inspection of the trees planted by voluntary labor and make a truthful report on fulfillment of tasks to higher authorities.

10. Under the leadership of the afforestation committees, the forestry and parks departments at various levels together with other departments concerned should strive to do a good job in planning, in growing nursery stock and other specific tasks. Deficient grassroots organization should be strengthened and improved.

11. Nursery stock costs and management and maintenance expenses required for voluntary tree planting are generally paid by the units holding forestry rights according to the principle of self-reliance, thrift and hard work.

12. The nationwide voluntary tree-planting campaign is a major measure to promote afforestation as a whole. In launching the campaign, the localities must combine it with accelerating the entire afforestation work and make overall arrangements for the use of nursery stocks, funds and technical manpower, the management and protection of forests, and so forth, in order to do a good job in voluntary tree planting and fulfill the annual afforestation plan at the same time.

13. In accordance with the stipulations of the "resolution on a nationwide voluntary tree-planting campaign" and these implementation measures, the people's governments of the provinces, autonomous regions and municipalities directly under the central government may formulate detailed rules for implementation in the light of actual conditions.

CSO: 5000/2076

GERMAN DEMOCRATIC REPUBLIC

DANGER OF AGROCHEMICALS TO GROUND WATER PURITY DISCUSSED

East Berlin BAUERN-ECHO in German 21 Jan 82 p 7

[Article by Prof Dr Horst Beitz, Institute for Crop Protection Research, Kleinmachnow: "Keeping the 'Cool Water' Clean and Healthy--What Must Be Taken Into Consideration in the Use of Crop Protection Products in Protected Drinking Water Zones"]

> [Text] The continual increase in GDR industrial and agricultural production is closely linked with the use of chemical in all branches of the national economy; that is, in the entire economy the most diverse chemicals were increasingly used to modify utility value characteristics, increase production, reduce manual labor and for other objectives. There was likewise a constant increase in the number and scope of household chemicals such as detergents and cleaning additives, among others. So the result of the use of the most diverse sorts of chemicals was an influence on the quality of available water resources. Surface waters, that is, rivers and lakes are affected to a much greater degree than underground water.
>
> In order to guarantee a stable supply of good-quality drinking water to the population, the water resources available in the GDR must be protected. That is especially true for underground water, since it has to safeguard about 70 percent of the GDR drinking water consumption.

The GDR is the country with the most strained water balance in Europe, as can be seen in the table below. Therefore, particular attention to ground water protection corresponds to the all-round interests of our socialist society, also in relation to the further intensification of our agriculture and the associated use of agrochemicals.

Average Annaul Water Supply and Demand

Country	Annual supply in cubic meters/inhabitant	Demand in percent
GDR	880	36
CSSR	2230	15
Poland	1900	10
USSR	1500	2
FRG	1750	15

The procurement of drinking water from ground water or surface water (dams, lakes and flowing waters) requires that these waters be sufficiently pure so that the normal treatment procedures in the GDR can guarantee a drinking water quality corresponding to the standard.

Physical, chemical and biological processes generally enrich ground and surface waters with relatively small quantitites of inorganic and organic components in varying proportions. The addition of industrial, household or agrochemicals can decidedly influence this quality, especially when substances harmful to water are involved. These are chemical substances that

--are poisonous to warm-blooded animals or water organisms, or that
--disturb the self-cleaning process or are not accessible to it, or that
--impair water usage.

In order to illustrate the dangers it should be mentioned that 1 liter of oil can pollute up to 1 million liters of water and make it unfit for human consumption. For this reason restrictions exist for animal and plant production as well, when the agricultural producer cooperatives and their agricultural acreages are located in protected drinking water zones. In addition to the use of liquid manure, in plant production that is especially true for the use of agrochemicals.

On the one hand nearly the whole gamut of crop protection substances and substances for control of biological processes authorized for use in the GDR represents substances harmful to water according to the law, but on the other hand the use of these substances is an important prerequisite in guaranteeing high stable yields of plant production.

Apart from protected drinking water zone one, where no use of crop protection products or products for control of biological processes is allowed, and where only about .02 percent of the total GDR acreage and less than .4 percent of the pasture land is located, protected drinking water zones two and three are much more important. Protected drinking water zone two has about .5 percent of the acreage and about 1.8 percent of the GDR pasture land. For this protected zone there are significant restrictions in the use of crop protection products and substances for control of biological processes, which are to be discussed in this article. In contrast, all state-allowed compounds may be used in protected drinking water zone three.

In order to meet the statutory requirements for the use of crop protection products and products for the control of biological processes, plant production enterprises must consider which species are found in the protected drinking water zones. This should occur with the departments for agriculture, transportation, energy, environmental protection and water resources at the competent district or city council, and should be noted in the field charts. The appropriate species file should likewise be labeled with the reference "protected drinking water zone one, two or three."

One must recommend that the species be organized so that they belong to only one protected drinking water zone, as has occurred in the number of agricultural producer cooperatives. These documents should be coordinated with the appropriate agrochemical center. Most important is to avoid damage in these regions from the use of crop protection products.

Once it has occurred, ground water pollution is in any case a problem that must be taken seriously, since the purification capacity of the ground water strata is relatively slight, so that there is a possibility of extensive underground spreading. As a rule in such cases the appropriate sanitation agency must close the entire ground water supply to further use, which usually causes enormous drinking water supply problems. Therefore, in order to exclude any strain on the ground, in protected drinking water zone two

--no temporary advanced airfields can be constructed
--no mobile mixing and loading stations can be operated
--no crop protection machines can be filled
--no crop protection machines can be washed
--no crop protection product waste water can be eliminated, even following preliminary ground liming.

In addition, it should be noted that in protected drinking water zone three

--cultures requiring intensive crop protection, such as tobacco, seed potatoes and cabbage, for example, should not be grown, or, as in the case of pomes, should not continue to be set out, in order to assure that all pests can be combated with the most effective compounds applied in an optimum manner, and
--following the use of crop protection products and substances for the control of biological processes for a period of at least 3 days no irrigation measures should be carried out, in order to avoid washing off substances that have not yet been absorbed by the plants and thus putting an additional burden on the soil, or to prevent herbicides already applied from being washed deeper into the soil.

It is possible, under consideration of the above-mentioned conditions, to introduce into protected drinking water zone two those crop protection products and substances for the control of biological processes that meet the hygienic and toxicological requirements. Initially that requires that drinking water values must be established. That occurs through the appropriate "commission for establishing maximum allowed residue for crop protection products and substances for the control of biological processes in foodstuffs" in the Health Ministry, since hygienic foodstuffs criteria must be applied in evaluating drinking water. Drinking water is to be evaluated as a staple foodstuff, for its average intake factor is 2.0 to 2.5 liters per day, and thus is considerably above that of individual foodstuffs.

In accordance with their mineralogical composition and geological origin, all soils can create and store ground water. The reserves of ground water that are used up are replenished through the creation of additional ground water by means of the seepage of precipitation or surface water. As a rough estimate one can suppose that in the case of clay and loam soils about 5 to 20 percent and in the case of sandy and gravelly soils about 30 to 70 percent of the annual precipitation seeps into the soil.

The most important criterion for adequate ground water protection is the presence of a layer above the aquifer which is impervious or nearly impervious to water.

Ideally that is clay or loam, whereby the humus in the soil, and especially in the layer of native soil is of paramount importance.

Thus the native soil layer can play a decisive role in keeping the ground water pure, since the purification effects are most notable only in the upper soil layers. From this it is clear that all ground waters under a covering of sand (for example all primeval river valleys and mainly the northern part of the GDR belonging to the porous rock region) are more easily polluted than ground water under black or brown soils.

The result, therefore, is that a number of crop protection products and substances for the control of biological processes cannot be used over sandy soils, in order to guarantee the protection of ground water.

All of these viewpoints were considered in determining which crop protection products and substances for the control of biological processes can be used in protected drinking water zone two. In this regard it was also presupposed that their use can always be controlled. The basis for this assumption is the plant protection regulation of 10 August 1978, which in Article 16, paragraph 4 requires documentation for the use of crop protection products and substances for the control of biological processes. That means that plant production enterprises must present this evidence in the case of controls by the facilities of the public health agency, plant protection agencies or other state control agencies.

In closing it must be pointed out that those compounds authorized for use in protected drinking water zone two are to be published in the January 1982 issue of "Nachrichtenblatt fuer den Pflanzenschutz in der DDR" [Bulletin for Crop Protection in the GDR].

9746
CSO: 5000/2008

BARBADOS

EDITORIAL HAILS GOVERNMENT, IADB ACTION ON BEACH EROSION

Bridgetown ADVOCATE-NEWS in English 17 Feb 82 p 4

[Text] THE TOURIST industry and the entire Barbadian population would welcome the announcement by Minister of Housing and Lands, DeLisle Bradshaw, that the Government is giving high priority to remedial action against beach erosion.

Mr. Bradshaw was commenting on the fact that the Inter-American Development Bank (IADB) will send a team of specialists to study beach erosion on the west and south coasts of Barbados, and make recommendations on coastal erosion and remedial work.

The importance of the beautiful white coral sand beaches that ring Barbados is fully appreciated by all Barbadians who realise the importance of the tourist industry to the economy of the island. Our climate and the beaches are the two major assets which are exploited to attract visitors to these shores.

Until the Government and other responsible Barbadians began to realise how important this beach asset was to the tourist trade little was done even to keep them clean let alone resist the never ending destructive action of the sea. The beaches used to be littered with every sort of unsightly, untidy, often unhealthy and dangerous domestic and sometimes industrial waste.

The Parks and Beaches Commission must be highly commended for its unfailing, continuous clearing, cleaning and beautifying of the coastal areas of this country. The commission has removed thousands of tons of debris and garbage from the beach environs, cleared ugly, tangled, pest-ridden undergrowth, and continues to keep clean the sites it has restored to beauty and cleanliness. Many repulsive and hideous areas once shunned by Barbadians and visitors alike are now favourite sunning, bathing and picnicking spots since the Parks and Beaches Commission has spruced them up.

Barbados has laws forbidding the removal of sand and stone from the beaches, as well as forbidding littering and the dumping of garbage. Building within 100 yards of the highwater mark is also prohibited and the Government has also legislated that all beaches must be accessible to all members of the public. Tourism development must provide clearly marked and unimpeded public access to all Barbadian beaches.

Over the years there has been severe erosion around Barbados' coasts. Several areas have completely disappeared, others have been radically altered by the scouring action of the sea. Beaches have been eroded, cliffs under cut and some buildings demolished. Roads have suffered too from the action of the sea, especially when there are periodic rough seas.

There are areas on the south coast which have been altered beyond recognition with beaches, walls, backyards, trees and so on swept away by the action of the sea. The same is true about the west coast where parts of Speightstown have been washed away with the road — Highway 1 — running adjacent to the beach where once there had been several homes with backyards on the waterfront.

Serious erosion has also taken place along the east coast of Barbados where the restless pounding of the Atlantic Ocean is even more powerful than that of the Caribbean Sea, but where there is almost continuous offshore reef protection.

Some Barbadians, some foreign owners of beachfront properties and the Government from time to time have all done various things in efforts to defend the coastal areas from the attacks of the seas. Almost all of the devices used have been ineffectual or have posed other problems to adjacent properties. The problem has been that, well-intentioned as these defences have been, they were implemented without the full understanding that beaches are dynamic and that the entire coastal area surrounding Barbados is part of the total ecosystem in which we are placed.

Thus any one structure that interferes with the working of the entire system will pose more problems than it was intended to solve. A case in point has been the old Coast Guard Station near Oistins, Christ Church where a boat basin was dredged, groynes and quays installed. In short order the basin silted up, the beaches to the north were eroded and a beach was deposited on a site further south where there had been sea battered cliffs. Other less dramatic examples exist.

The IADB team is expected to have expertise adequate to solving the problems of beach erosion as they apply to Barbados. Barbados has a tradition of delay in accepting reports of experts and taking the recommended action. In the context of beach erosion, adhering to this tradition is to court disaster, for the seas roll ceaselessly and inexorably on grinding away one of our most precious assets. This is one area where urgent action is absolutely necessary.

CSO: 5000/7522

SATELLITE DISH APPROVED DESPITE ENVIRONMENTAL OBJECTIONS

Hamilton THE ROYAL GAZETTE in English 25 Jan 82 p 1

[Text]

The way appears to be clear for the erection of a giant satellite dish along a protected Devonshire ridgeline by Cable and Wireless.

For yesterday, the Hon. Haskins Davis, new Minister of Planning and the Environment, said he supports the decision of the Development Applications Board to grant Cable and Wireless permission to erect the dish, over the objections of the National Trust and the Planning Department itself.

And Mr. Stuart Hayward, who argued against the dish erection on behalf of the Bermuda National Trust, said that the Trust had no plans to appeal the D.A.B. decision.

Explaining why he agreed with the D.A.B., Mr. Davis said: "We are living in a progressive world and that (satellite dish) is a part of life these days."

The Cable and Wireless project, scheduled to be completed by 1984, will cost an estimated $18 million.

Ninety-seven feet in diameter, the dish will be placed on a 13½-foot pedestal, making it visible from North Shore to Kilderry Estate and as far as St. Brendan's Hospital.

The National Trust and the Planning Department said that the satellite dish would conflict with a major goal of the 1974 Development Plan of preserving environmental features and protecting the ridgeline.

The National Trust also wondered whether the satellite dish's use of microwaves might be hazardous to human health.

Mr. Hayward explained that the Trust objected to the dish because of the aesthetic considerations and the potential radiation hazard.

"We don't have the knowledge or resources to take it from there," he explained.

He warned that the Cable and Wireless dish might spark proliferation of satellite dishes.

"What we'd like to think is that since we have this one large dish, we won't need any more," he said.

Mr. Harry Saunter, head of Cable and Wireless, said that the dish was vital to the development of Bermuda. It would be used primarily for overseas calls and would take the place of under-water cable links with the United States, he added.

CSO: 5000/7021

NATION URGED TO PRAY FOR RAIN

Drought-Scare

Gaborone DAILY NEWS in English 16 Feb 82 p 1

[Text]

THE PRESIDENT Dr Q.K.J. Masire is expected to join the nation in prayers for rain tomorrow.

Against the background of a looming drought-scare the Botswana Christian Council (BCC) in consultation with the Office of the President have set aside Wednesday February 17 for rain prayers throughout the country. Every village will arrange for prayers as it suits the people, and it is hoped that the prayers may continue throughout this week.

In Gaborone, prayers will be held at 4.30 p.m. tomorrow at the National Assembly grounds. All residents of Gaborone are invited to attend and to be punctual.

In a statement marking tomorrow as a day for rain prayers, the BCC appeals:

"Batswana, we know you have taken prayers for rain very seriously in the past we therefore know you will this time also consider the gravity of our position. Our fields are withering, our cattle are dying and our wild animals will be dying by the hundreds."

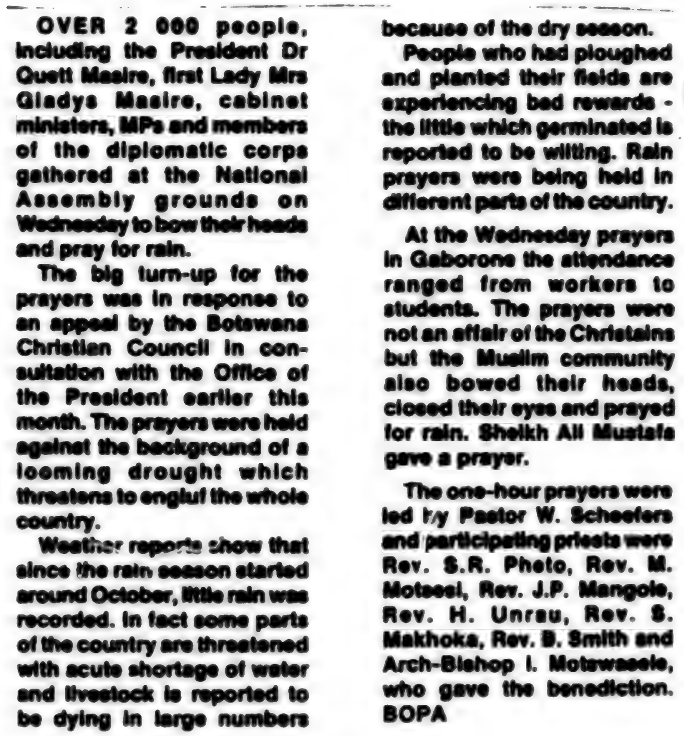
The statement further states: "Batswana bagaetsho, praying for rain is nothing foreign to us. It is a tradition we have inherited from our fore-fathers, let use therefore please all cry out to our land, in one voice. We have been repeatedly told in recent months that our diamonds are not bringing the returns they should be brining."

"The decision is in our hands if the minerals can temporarily not sustain us, let us then with one heart come together and ask the Giver of Life to make the land fertile and productive. In fact, the Lord our God has promise that if we heed His Commandments, He will give us raind. (Deuteronomy 11:13-17)."

Sizable Turnout

Gaborone DAILY NEWS in English 19 Feb 82 p 1

[Text]



OVER 2 000 people, including the President Dr Quett Masire, first Lady Mrs Gladys Masire, cabinet ministers, MPs and members of the diplomatic corps gathered at the National Assembly grounds on Wednesday to bow their heads and pray for rain.

The big turn-up for the prayers was in response to an appeal by the Botswana Christian Council in consultation with the Office of the President earlier this month. The prayers were held against the background of a looming drought which threatens to engulf the whole country.

Weather reports show that since the rain season started around October, little rain was recorded. In fact some parts of the country are threatened with acute shortage of water and livestock is reported to be dying in large numbers because of the dry season.

People who had ploughed and planted their fields are experiencing bed rewards - the little which germinated is reported to be wilting. Rain prayers were being held in different parts of the country.

At the Wednesday prayers in Gaborone the attendance ranged from workers to students. The prayers were not an affair of the Christains but the Muslim community also bowed their heads, closed their eyes and prayed for rain. Sheikh Ali Mustafa gave a prayer.

The one-hour prayers were led by Pastor W. Scheefers and participating priests were Rev. S.R. Photo, Rev. M. Motsesi, Rev. J.P. Mangole, Rev. H. Unrau, Rev. S. Makhoka, Rev. B. Smith and Arch-Bishop I. Motswasele, who gave the benediction. BOPA

CSO: 5000/5692

BOTSWANA

BRIEFS

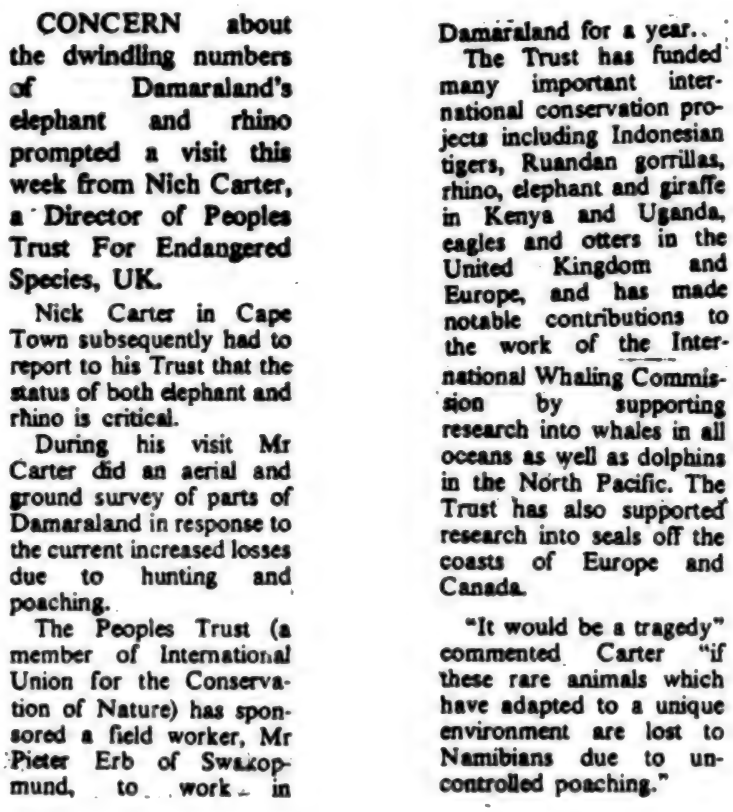
DROUGHT CONCERN--The Government is still seriously concerned about the drought that is affecting the country. These were some of the remarks delivered by the Minister of Health, Mr Lemme Makgekgenene, when responding to an appeal by his Tonota constituents for assistance from Government to alleviate the drought situation. Mr Makgekgenene said Government was very concerned about the drought and already a drought Committee has been formed to assess the situation and give report to Government for consideration. He also expressed concern that drought this year seemed to be more severe than previous years. Mr Makgekgenene noted that the drought was likely to hamper certain developments, since it has "tightened" people's hands behind their backs. The Minister has been told that boreholes were drying up, and that grazing pastures and vegetations were deteriorating. Mr Makgekgenene also took the opportunity to tell people that the Government was experiencing a serious drop in the sales of diamonds, the main contributor to the economy of the country. The Minister also briefed the meetings about the proposed employment and citizenship amendment bills to be presented to the present parliament session for debating. Mr Makgekgenene also called on people to join hands with the Government for effective development of primary health care.--BOPA [Text] [Gaborone DAILY NEWS in English 25 Feb 82 p 1]

CSO: 5000/5692

DAMARALAND'S ELEPHANT AND RHINO SEVERELY THREATENED

Windhoek THE WINDHOEK ADVERTISER in English 5 Mar 82 p 4

[Text]



CONCERN about the dwindling numbers of Damaraland's elephant and rhino prompted a visit this week from Nich Carter, a Director of Peoples Trust For Endangered Species, UK.

Nick Carter in Cape Town subsequently had to report to his Trust that the status of both elephant and rhino is critical.

During his visit Mr Carter did an aerial and ground survey of parts of Damaraland in response to the current increased losses due to hunting and poaching.

The Peoples Trust (a member of International Union for the Conservation of Nature) has sponsored a field worker, Mr Pieter Erb of Swakopmund, to work in Damaraland for a year.

The Trust has funded many important international conservation projects including Indonesian tigers, Ruandan gorrillas, rhino, elephant and giraffe in Kenya and Uganda, eagles and otters in the United Kingdom and Europe, and has made notable contributions to the work of the International Whaling Commission by supporting research into whales in all oceans as well as dolphins in the North Pacific. The Trust has also supported research into seals off the coasts of Europe and Canada.

"It would be a tragedy" commented Carter "if these rare animals which have adapted to a unique environment are lost to Namibians due to uncontrolled poaching."

CSO: 5000/5693

RAINS ARRIVE TOO LATE TO SAVE CROPS

Johannesburg THE CITIZEN in English 11 Mar 82 p 16

[Article by Keith Abendroth]

[Text]

WIDESPREAD rains in many parts of parched South Africa in the past few weeks have come too late to save millions of rands worth of crops and livestock — and many farmers who had been teetering on the brink of bankruptcy.

A spokesman for the Transvaal Agricultural Union told The Citizen yesterday that the drought in the province had now reached "the critical stage where rain will not save harvests".

"But the little rain of the past week is not enough to stop the rot in more than one sense of the word, or to halt deterioration of crops," he said.

Heavier rains would now only bring relief in some areas by raising the rapidly dropping levels of dams — vitally needed water supply sources for the dreaded winter now on its way.

In some areas farmers had already trekked with their cattle in search of water and grazing, he said.

Mr Harry Wolte, general manager of the Northern Transvaal Co-operative at Nylstroom, said that conditions were "at real crisis level" in the vast area stretching from Pretoria to Messina.

The larder of South Africa — big parts of the northern Transvaal and the maize triangle —was bare.

Farmers in the northern Transvaal have reported the death of thousands of head of cattle, and of antelope — particularly kudu, which are selective grazers.

In the Soekmekaar/Munnik area of the northern Transvaal farmers report having to send out gangs of Black beaters at night to chase thirst-crazed kudu out of tomato fields.

Estimates of damage to maize crops are as high as 75 percent in places and farmers stand to lose millions of rands in the smallest crop in years.

From Christiana sources report the death of "thousands" of head of cattle.

In the south-western Transvaal and northern Cape, an agricultural spokesman said: "The farmers are on their knees."

Many thousands of tons of groundnut and sunflower seed crops are among those which have been lost.

Businessmen in the south-western Transvaal to whom The Citizen spoke yesterday, said that business had "come to a standstill".

In the Upington district farmers said that "many thousands" of sheep had been lost to the drought while farmers in the Kalahari area of Kuruman said that the condition of cattle was so bad that they would have difficulty in selling them off.

In the Transvaal, cotton crops are threatened with complete disaster in the lowveld area and rains would be too late for the sugar cane.

The Letaba area was more dry than in many years and rainfall in the Tzaneen and Mooketsi districts had been totally inadequate.

In the north-western Transvaal, west of Lichtenburg, farmers have reported to the Transvaal Agricultural Union that at best crops will be about 50 percent of last year's crop.

Extension officers in the Magaliesberg area report no hope for Marikana, parts of Rustenburg and Brits.

In the eastern Transvaal, February was the driest month in more than 20 years and harvests will be 50 percent smaller than last year.

CSO: 5000/5690

CUMULATIVE EFFECTS OF TOXINS ON OCEANS CRITICIZED

Pretoria SOUTH AFRICAN DIGEST in English 12 Feb 82 pp 8-11

[Article by D. A. Lord, Marine and Earth Sciences, Cooperative Scientific Programs, Council for Scientific and Industrial Research, writing in the December 1981 edition of SCIENTIAE: "Man and His Ocean"]

[Text] For the last 10 years, the Cooperative Scientific Programmes of the CSIR has undertaken an extensive Marine Pollution Monitoring and Survey Programme of the South African coastline, supported by the Departement of Water Affairs, Forestry and Environmental Conservation. This programme has resulted in an assessment of man-derived influences and has shown that, apart from localized disturbances, our seas are still clean; although the number of instances where coastal areas are coming under stress is clearly increasing.

The South African coastline is long and rugged. Down the east coast flows the warm Agulhas current, while up the west coast we have the Benguela current which is fed from cold Antarctic waters. These currents in part determine the coastal climates; the east coast being warm and relatively wet, the west coast cold, frequently foggy and very dry, but supportive of a rich fishing industry.

Man tends to live in places of greater appeal and where resources such as water are available. Consequently the east coast is being rapidly developed relative to the west coast and along with this development come the normal activities such as harbour development, factories and pollution.

The days of flagrant pollution have passed. Most effluents receive some pre-treatment before discharge. However, the sea is not an unlimited sink for use as a disposal site and a challenge that faces scientists and engineers is that of how to measure subtle changes, those that are slow but take place over a long time and which are usually irreversible.

How well are we protecting our coastal environment from these potential effects and how do we go about measuring for changes?

In the mining industry in the past, caged canaries were used underground to warn miners that the concentration of a toxic gas (in this case methane) had exceeded the limits of safety in the mine. When the canaries died it was time to leave the mine before the miner himself was overcome. On a very limited scale, such 'indicators' of a potentially hazardous situation had their value; however, on a wider scale, such as along tens of kilometres of coastline, the loss of a particular species of plant or animal from the local community could prove disastrous. In attempting to measure the increasing stress which is being placed upon parts of our coastline, similar techniques are too crude, and in general only provide evidence of change after too much change has occurred.

Consequently, we are forced to find more subtle warning systems, with indication on changes that are not only minor, but are potentially reversible at the level of an individual component of a population.

There are no absolute answers to assessments about what is harmful and what is not. In addition, studies must fit in with public opinion as to what is acceptable in terms of environmental perturbation. All this provides a unique scientific challenge, particularly relevant to South Africa's coastal waters.

Pollution by oil

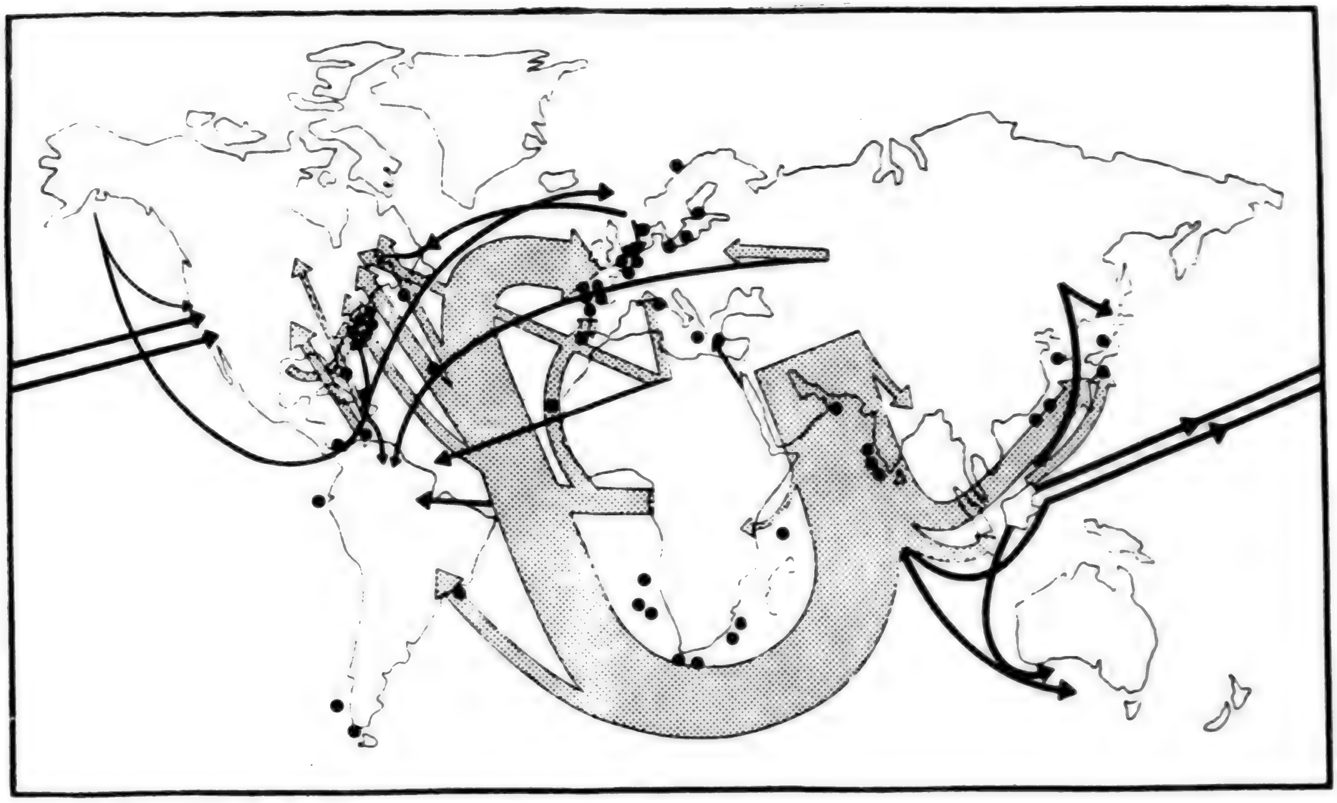
South Africa is situated on the world's major oil shipping lanes. Each day about 100 oil tankers ply their way around the Cape of Good Hope, half of these laden with oil, and the other half returning empty to the Middle East for their next cargo. The potential for major oil pollution is high; nonetheless the number of major accidents along our coasts is fortunately surprisingly low compared with other parts of the world.

Oil, when spilled on the sea, spreads rapidly and then starts to undergo evaporation reactions as well as chemical and bacteriological decay. This ageing process of spilled oil does in fact reduce the potency of oil to marine organisms, as the components of oil which evaporate soonest and are most rapidly altered are those that appear to be most toxic to these organisms. Consequently, after three or four days of exposure oil has lost most of its toxic effects and its major influence on marine life and on our shorelines after that is that of physical 'smothering'. Ultimately (in say two to three months), any exposed oil will form small 'tar balls', which will remain in the sea or finally wash ashore on some distant beach.

Probably the single most dramatic oil spill along the South African coast originated from the collision of the two supertankers, *Venpet* and *Venoil*. At 09h39 on 16 December 1977, the fully-laden 330 000 dwt tanker *Venoil* collided with her sister ship, *Venpet*, approximately 55 km from Plettenberg Bay, with the loss of approximately 30 000 tonnes of oil. The oil was initially carried westwards in the Agulhas current and began coming ashore under the prevailing southerly winds, polluting a considerable stretch of holiday coastline from Plettenberg Bay to Still Bay.

On a world-wide scale, the number of tar balls in our ocean waters is low; however, the effect of the tanker collision was clearly seen in a study of tar ball concentrations at sea undertaken at that time by scientists from the CSIR's National Research Institute for Oceanology in Stellenbosch. Tar ball concentrations were found west of the spillage site up to eight months after the accident, which coincided with the anticipated current movements in the area. In addition, this supports previous evidence indicating that tar balls tend to remain at sea for long periods of time and, in relatively warm waters such as ours, have a lifetime of one to two years.

The effects of the oil which was washed ashore were initially severe and were carefully studied by scientists from the Sea Fisheries Institute (Department of Agriculture and Fisheries). Localized areas, such as estuaries and coves, suffered the greatest damage from the smothering effects of oil. The patchy distribution of the oil however enhanced recolonization of smothered areas, a process which was under way within two months of oil contamination. But this does not imply a stable and complete recovery and the area will have slowly to regain its equilibrium and diversity of plants and animals over time.



Major oil movements (→) and major tanker spills since 1974 (●)

What was shown from this study is that, generally speaking, where oil has been washed ashore, provided no further oil pollution occurs for a period of at least two years, a complete recovery of that area can be anticipated if similar plants and animals exist nearby to facilitate recolonization. A repeat pollution by oil within that period will cause extreme damage, with potential for decimation of the coastal plant and animal life.

Prevention is, however, better than cure and the prevention of oil contamination of very sensitive or vulnerable areas is of particular concern. When oil is at sea, there are virtually no satisfactory methods of mechanically 'picking up' the oil. However, chemical dispersants exist which, when applied to fresh oil (i.e. less than 24-hour exposure), will help to disperse rapidly the oil into small drops distributed in the top few metres of the water. This facilitates the weathering processes enormously, almost causing the oil to 'disappear'. The major concern regarding the use of chemical dispersants is their additional toxicity to marine organisms. For example, after the now famous grounding of the tanker, *Torrey Canyon*, dispersants were used with almost gay abandon. Huge shoreline damage was caused, due primarily to the dispersants and not to the oil. Since then, though, the composition of dispersants has changed and all dispersants now require certification before they may be used. As part of this certification process, using commonly occuring limpets, the Sea Fisheries Institute in Cape Town conducts rigorous tests on the effects of dispersants and, as a result, only the least toxic dispersants are used along South African coasts, under strict control. However, dispersants are far from being universally accepted, and their use is not allowed in United States' coastal waters. The Americans in fact, as one wag has it, consider the use of dispersants as 'pouring trouble on oiled waters' but this is probably an exaggeration.

Unfortunately the use of floating booms to trap spilled oil is a largely overrated function. There are no magical restrainers for oil which is moving in the sea, where the action of the water will drive oil past booms as if they did not exist. Effective booming of oil can be done in certain coastal areas and very interesting work conducted by engineers from the University of Stellenbosch, Viskor and the oil industry, has shown that sensitive areas of our coastline can be protected by the use of floating booms which are placed at an angle to the oncoming oil, in this way deflecting the oil rather than trying to stop it. Detailed computer simulation of boom structures, as well as studies of the most effective manner in which to anchor and control these booms have been conducted. Booms are very expensive (for example a 1000 m boom would cost in excess of R100 000) so there is a significant incentive for proper design of these structures. The next year will see a completed boom design for Saldanha Bay, one of our most valuable natural areas along the coast.

Biological magnification

Generally we are led to believe that wastes will stay where they have been deposited. This is true in principle but certain materials are readily transported long distances frm their origins, either in the water or the air, or by passage through organisms. An excellent example of the latter is the ubiquitous insecticide DDT. This material, heralded upon its introduction as the final solution to malaria, has shown itself to be very long-lived, retaining its efficacy for many years.In addition, DDT is soluble in fatty tissue; consequently when, for instance, a bird eats fish which have been exposed to DDT, the bird will retain the DDT consumed and ultimately show body burdens of DDT far in excess of that of the fish. These levels can ultimately be toxic, but are more likely to lead to sub-lethal effects such as thinning of eggshells (it appears as if DDT interferes with the process of calcium deposition) with resultant loss of young.

This process of increase in concentration of a material as it moves upwards in the food chain is known as biological magnification. Knowledge of this process is extremely useful in monitoring build-up of specific materials, which can give information both as to the amounts of such materials in the environment, as well as about their origin.

An excellent example of this has been demonstrated in a study on the concentration of chlorinated hydrocarbons in sea bird eggs and in cats from Marion and Gough Islands. Chlorinated hydrocarbons, which include DDT, are a group of man-made pesticides with great persistence; they are extremely fat-soluble and therefore prone to pronounced biological magnification.

During the period 1977-1979 samples of sea bird eggs were collected on Marion Island in the South Atlantic Ocean by courtesy of the Percy FitzPatrick Institute of African Ornithology. As Marion Island is far from any shore it should represent a clean environment. To preserve the eggs from deterioration after collection and during transportation they were wrapped in aluminium foil and frozen before being returned to Durban. The analysis of the eggs was conducted by chemists and biologists of the CSIR's National Institute for Water Research.

The results of these investigations show an amazingly good correlation between feeding habits of these animals and their insecticide content. The Rockhopper penguin, feeding mainly on krill and close to the islands, showed the lowest DDT levels. The King Penguin and Kerguelen Petrel wander further offshore, but remain in the southern latitudes, and have higher levels of DDT. The Wandering Albatross and White Chinned Petrel, which feed on fish, carrion and offal, and are seen as far north as South African waters, have still higher levels.

But the predators highest on the food chain, the cats on Marion Island, show huge body fat DDT levels — amply demonstrating the profound increase in concentration of these meterials up the food chain.

The results of studies such as these indicate that we are more dependent on the acts of others than we realize. Conservation is a global issue that knows no boundaries.

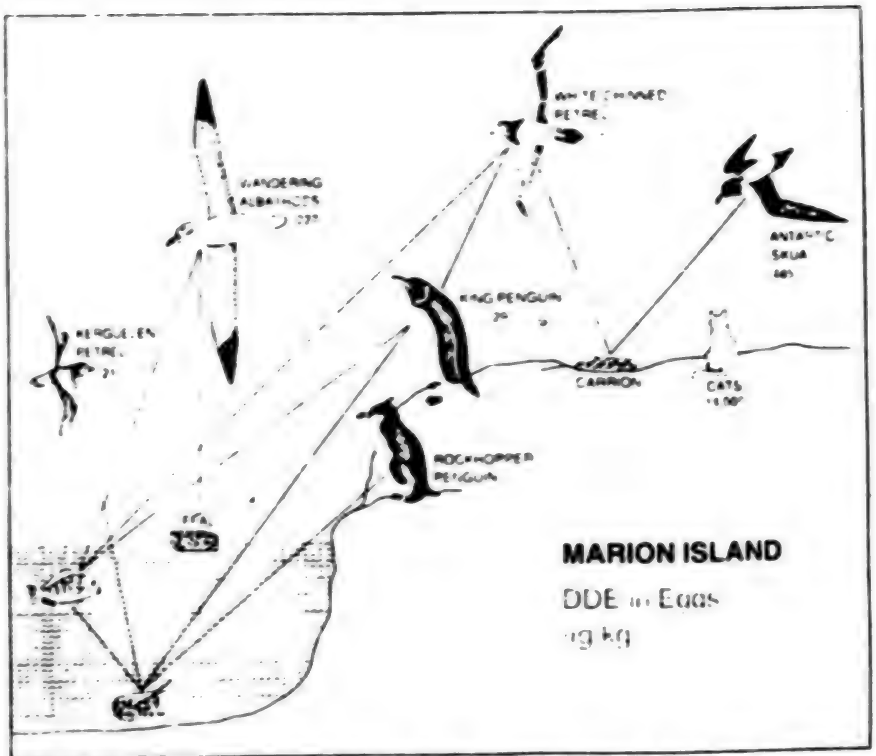
Measuring subtle effects on marine life

The era of 'massive polution' as mentioned earlier, is past, when large quantities of toxic materials were indiscriminately disposed of. Most discharges to the sea are today far better controlled; but the frequency of discharges is increasing rapidly. The dilemma of the scientist is to assess properly the effects of lower concentrations of toxins, which may in the long term produce more subtle, and perhaps more damaging effects than higher concentrations.

One such effect which can be used is to assess the ability of an organism to reproduce properly in its localized environment. The philosphy of a measurement of this type is that a healthy organism in its natural environment will reproduce successfully. Assuming reproduction to be the most sensitive stage of an organism's life cycle, any effects on its reproductive capability would be the first sign of stress

An experimental design to measure the effects on reproductive capacity at very low toxin concentrations has been developed in the regional laboratories of the National Institute for Water Research in Durban. The animal chosen for this work is a small burrowing amphipod (a prawn-like organism which, when fully grown is aproximately 5 mm long). In these organisms, the full life cycle from egg to adult is only about 30 days, with females carrying eggs in brood pouches. The first brood carried by a newly matured female consists of only one or two eggs, and it is these animals that are used in experimental work. Later broods are larger — the largest brood seen in the laboratory is a female with 45 eggs. The pouches are green when the eggs are fresh, and turn brown as egg development proceeds. The females give birth to live young which, when they emerge from the pouch, usually have habits similar to the adult. Consequently, the observation of these animals through a full life cycle (and its successful reproduction) is relatively convenient. Furthermore, the potential is there to follow these organisms through a number of life cycles.

This experimental procedure can be used in a very significant manner; in fact it is this technique that has been used for developing the standard for discharge of ef-



When the ubiquitous insecticide DDT decomposes it forms DDE. DDT, which retains its efficacy for many years, is soluble in fatty tissue sc that a bird which eats fish exposed to DDT will ultimately have a level in excess of that of the fish. This increase in concentration of a material as it moves up the food chain is known as biological magnification. Note the high DDE levels in the cats on the island

fluent in pipelines — the specific example being that of the toxic material fluoride, a significant component of the gypsum waste scheduled to be discharged into the sea off Richards Bay. Fluoride in water shows toxic properties at very low concentrations, yet seawater contains as much as 1,5 parts per million (by weight) of dissolved fluoride. Consequently, marine life is easily affected by additional material, and so the question to be answered was 'How much fluoride in seawater can be tolerated in the sea off Richards Bay?'

Using the burrowing amphipod, and following its reproductive success when exposed to various concentrations of fluoride under controlled laboratory conditions, very interesting results were obtained. In the control experiment (i.e. using regular seawater), normal reproductive success was shown. At slightly higher fluoride concentrations (up to 5,5 ppm) no apparent deviations from reproductive success were observed. However, at a concentration of 10,3 ppm of fluoride, a definite loss of reproductive success was observed, while at 17,1 ppm fluoride, there was virtually no reproduction. Amazingly, even during exposure to high concentrations of fluoride adult organisms were not killed even after 30 days of exposure, this fact indicating the phenomenal gain in 'sensitivity' obtained by measuring a sub-lethal effect on a sensitive stage of an organism's life cycle.

Thus an elegantly simple and scientifically sound experimental programme, coupled with interpretation, can lead to an acceptable level of protection being afforded to coastal waters.

Based on data of this type, in the case of Richards Bay, regulations are now in force restricting the fluoride concentration immediately surrounding the marine pipeline to 5 ppm, a level slightly lower than that at which no effects could be observed.

The protection of resources can now be firmly based on observations and experimental results. This method is particularly suitable at single sites or for specific problems. In the long term scientists will have to know what are the highest levels of a given material (for example, fluoride) that our seas can tolerate indefinitely or what levels of a given material our seas can assimilate. We know that processes such as mixing and decay can reduce the objectionable nature of certain materials, but we have to know how fast these processes work, and the final resting place of materials of concern.

The scientific community will continue to address topics of this kind with vigour, but by its nature tends to concentrate on making measurements and interpreting results. It is the regulatory and control function which finally dictates the level of protection we accord our environment. And this is a reflection of public opinion, a measure of the collective will of a society. Our coastal resources are not unlimited; however, this does not imply that development and conservation are mutally exclusive. Unless the levels of conservation required are completely resolved prior to development, a compromise of these is inevitable.

CSO: 5000/5687

SOUTH AFRICA

BRIEFS

DROUGHT IN BOPHUTHATSWANA--Mmabatho--The managing director of Agricor, Mr Beuster, says the drought affecting most parts of Southern Africa has also left its mark on Bophuthatswana. He said many of the grain-producing areas had received less than 50 percent of the normal rainfall for the season. Crops would be half their normal size in the Disobotla area and no summer wheat would be planted this year because the soil was too dry.--Sapa [Text] [Johannesburg THE CITIZEN in English 8 Mar 82 p 14]

CSO: 5000/5689

DROUGHT-STRICKEN MATABELELAND FACES HUGE CATTLE LOSSES

Salisbury THE HERALD in English 3 Mar 82 p 1

[Text] **IF cattle-rescue measures in drought-stricken Matabeleland fail, the number of animals facing starvation in the communal areas alone could go as high as 500 000.**

This was the grim warning of the provincial branch president of the Commercial Farmers' Union, Mr Rob Sayers. He said yesterday that in the commercial sector farmers were planning a massive destocking operation which could involve the slaughter of a further 200 000 head of catttle.

He told the union's council meeting recently that cattle prices had dropped sharply over the past 10 days.

Heifers which had been fetching $120 a head were now selling for $30.

Mr Sayers appealed to farmers with grazing in other parts of the country to buy up Matabeleland cattle in order to help stabilise prices.

In Bulawayo a cattle auctioneer said cattle bought by the Cold Storage Commission had a minimum price set by the Government. Because of these Government-subsidised prices many commercial farmers were selling their cattle to the commission, rather than on the open market.

The auctioneer, Mr R. J. N. Wakefield, of Tummer Midlands Auctioneers, said farmers were trying to sell off their cattle because of the drought and the shortage of stockfeed.

The cattle market was being flooded. People in the communal areas were also selling large quantities of cattle, he said.

The Minister of Agriculture, Senator Denis Norman, who recently toured the drought-stricken areas, estimated that $25 million would be needed in relief funds to rescue the cattle industry.

The CSC has said it will buy between 150 000 and 200 000 head from the communal lands as part of the cattle-rescue operation.

And as feed supplies run out in the communal areas, farmers there are sending more pigs for slaughter.

Mr Dennis Grey, the branch manager of Colcom in Bulawayo, said yesterday almost twice as many pigs were being slaughtered this season, compared with last season's figures.

The company's abattoir was capable of handling the extra animals, he said, as it had the capacity for 450 pigs a day. Colcom now processes 250 beasts each day.

The director of the Pig Industry Board, Mr David Holness, said pig producers in the communal areas would be affected more than their commercial colleagues by the drought.

Peasant farmers relied mainly on maize and sorghum which they grew themselves for pig-feed, he said.

CSO: 5000/5694

PROTEST GROWS AGAINST FOREST REFORM PLAN

Paris LE FIGARO in French 1 Feb 82 p 24

[Article by Jacques Lesinge: "The War of the Forest"]

[Text] France had never witnessed the likes of it before. Hunters, fishermen, and ecologists have just joined hands to go to war against a forest reform project which would give absolute priority to the lumber industry. In spite of all the denials by Roger Duroure, socialist deputy from Landes and author of the project, that he wants to stifle ecology, his opponents have greeted his assurances with the greatest skepticism. His plan, as they see it, would transform the forest into a lumber factory: no more fauna, no more long-range scientific concerns. Instead, immediate profits. Masterminds of the project: forestry engineers, the ogres of the woods.

Whence the holy alliance between hitherto foresworn enemies. Hunters, fishermen, and ecologists have buried the hatchet on suddenly discovering that give or take a few details, they had been defending the same cause for years, and that one man's notion of trophies was compatible with another man's notion of survival. "We must make room for each other," said Jean-Patrick Le Duc, deputy secretary general of the French Federation of Societies for the Protection of Nature (FFSPN). Echoing this feeling, Joel Delvert, director of the Meuse Federation of Hunters and chairman of the Union of Hunting Administration Personnel, and Michel Martini, chairman of the National Union of Departmental Fishing Federations, added: "We were the first ecologists in France."

Closing its ranks, this imposing cohort might be reinforced by private forest owners, who also rather object to Duroure's intentions and threats. And some among the forestry staff, hostile to any short-tern forestry management, would likewise be inclined to join the enemy's ranks. To top it all, it now also appears that the project might cause some government upheavals in its wake.

Already stripped of the seas, of architecture, of housing, and of urban development, Michel Crepeau, minister of the environment, now stands to be deprived of forests and the protection of nature, which would become autonomous under the Duroure plan.

This is tantamount to sacrificing his ministry at the altar of the lumber industry. For the moment, Michel Crepeau is refusing to make any comment. He is waiting for Duroure's final report, to be submitted to Pierre Mauroy around mid-February.

An Eleven Billion Franc Deficit

Fifteen days of waiting. But the issue has already attracted so much attention that the prime minister has become worried about its consequences. They know how to count at Hotel Matignon. Four million five hundred thousand fishermen, one million eight hundred and fifty thousand hunters, five hundred thousand ecologists affiliated with FFSPN, and two million forest land owners, do add up to a lot of voices. That is why Pierre Mauroy asked Roger Duroure to review certain aspects of his plan with the organizations concerned. A wise move.

And yet everyone is in agreement on one point: French forests, the largest in Europe with their 14 million hectares, are ailing. The lumber industry, which should be one of our resources, last year again registered a deficit of 11 billion francs. Three ministries--Industry, Agriculture, and Environment--are jointly responsible for forest management. Laws and regulations interfere with one another, while those responsible for the welfare of the forest become lost in administrative mazes, at times no longer able to identify their own jurisdictions.

The previous administration had begun to tackle the problem in 1979. A law was to have been proposed to Parliament. For his part, Pierre Mauroy picked up the torch, and entrusted this heavy responsibility to Duroure on 24 July of last year.

Roger Duroure, deputy from Landes, was a lumberman for three years before becoming a teacher. He is himself the owner of a small parcel of forest land near Latche, where Francois Mitterrand owns a house. This husky man, with his Sud-Ouest accent, is surprised by all this fuss: "My mission is clear; it is to present a proposal report capable of improving French forestry, especially at the economic level."

Large Caliber Ammunition

He deliberately emphasizes the last two words of his statement. In his eyes, they justify a position for which his opponents blame him today: "At no time did I consider the hunting or fishing organizations. This was not my aim, and that is why I had not consulted certain associations which are now very worried." This being so, Duroure adds: "But if it was necessary to change the habits of fishermen and hunters for the sake of better forest management, I would do it."

Clearly therefore, priority will go to the forestry sector. In order to make it profitable, Duroure asserts: "It is not healthy to have several forestry administrations. What is needed is a single authority. The complex of agencies that manage the forests and the lumber industry must be reorganized within an independent ministry department."

A ministry, or a state secretariat? The deputy remains cautious about terminology. On the other hand he makes it clear that his plan calls for private forest owners to comply with the directives of the Forestry Rural Engineers: "Private forests represent 10 million hectares of woods. They are often poorly maintained or even neglected. I want to create a management plan spread out over a period of 20 years. Owners refusing to comply with it would become subject to fiscal constraints."

It is precisely the specter of the forestry engineers' omnipotence which worries not only the landowners, but especially at this time, the hunters, fishermen, and ecologists. They have bad memories of their coexistence with lumber specialists, when they all shared the Ministry of Agriculture, some 10 years ago, before the Ministry of the Environment came into being. Yet, Duroure would like to be reassuring: "The forests are too important to be entrusted to foresters. A dynamic forest cultivation is compatible with protection of nature; industry must adapt itself to the forest; each can retain a voice in the matter; we must not remain locked into a fifteen-year old position; the mentality of the foresters has evolved."

True enough, but for his part, Joel Delvert remembers that not too long ago, a forestry engineer showed him a heavy caliber bullet and said: "Here is how you manage the forest as far as I am concerned."

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CSO: 5000/2072

GREECE

BRIEFS

CATASTROPHIC FLOODS--The Salonica and Thessaly nomes were hit yesterday by floods that destroyed thousands of acres of cultivated land. According to our correspondents the Erythropotamos River crested yesterday morning in the Salonica nome, flooding 35,000 acres of land belonging to residents of the Karoti, Elafokhori, Tsaliki, Ellinokhora and Vrysika villages. Similarly, 60,000 acres of land were flooded in the Sofades and Palamas areas of the Thessaly nome. Damages are estimated at 50 to 100 million drachmas. A total of 26 villages are still isolated because of heavy snowfalls. The Pineios River flooded the area of Farkasona in Trikala, destroying thousands of acres of cultivated land. [Excerpt] [Athens I VRADYNI in Greek 27 Feb 82 p 2]

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